

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-5 (canceled)

Claim 6 (currently amended): A protection circuit for protecting a battery pack having rechargeable batteries connected in series from overcurrents and overvoltages, the protection circuit comprising:

a protection device having a heating resistor and a fuse element provided on a circuit board; and

sensing means for detecting an overvoltage across any of the batteries in the battery pack and switching a current flowing into the heating resistor,

wherein the fuse element is melted in an overcurrent condition, and in an overvoltage condition on any of the batteries, and

wherein the sensing means switches on the current flowing into the heating resistor wherein a voltage across the heating resistor is less than a voltage across a total number of batteries in the battery pack, thereby causing the heating resistor to generate heat and the fuse element to be melted.

Claim 7 (previously presented): The protection circuit according to claim 6, comprising a plurality of sensing means for sensing an overvoltage between different batteries, wherein in an overvoltage condition on any of the batteries, the sensing means switches on a current flowing into the heating resistor.

Claim 8 (currently amended): The protection circuit according to claims 6 or 7, wherein in the overvoltage condition on any of the batteries, a voltage across a predetermined number of the batteries in the battery pack is applied to the heating resistor, wherein the predetermined number of the batteries in the battery pack is less than the total number of batteries in the battery pack.

Claim 9 (currently amended): A protection circuit for protecting a battery pack having rechargeable batteries connected in series from overcurrents and overvoltages, the protection circuit comprising:

protection devices each having a heating resistor and a fuse element provided on a circuit board; and

sensing means for detecting an overvoltage across any of the batteries in the battery pack and switching a current flowing into the heating resistor,

wherein the plurality of protection devices are connected in parallel,

wherein in an overcurrent condition, the fuse element is melted at each protection device, and

wherein in an overvoltage condition on any of the batteries, the sensing means switches on the current flowing into the heating resistor, thereby causing a voltage across a predetermined number of the batteries in the battery pack to be applied to the heating resistor of each protection device, causing the heating resistor to generate heat, and causing the fuse element to be melted, wherein the predetermined number of the batteries in the battery pack is less than a total number of batteries in the battery pack, and wherein a voltage across the heating resistor is less than a voltage across a total number of batteries in the battery pack.

Claim 10 (previously presented): The protection circuit according to claim 9, wherein the heating resistor is connected with a rectifier element to prevent conduction resistance from remaining via the heating resistor when an overcurrent has caused the fuse element to be melted incompletely.

Claim 11 (new): The protection circuit according to claim 6, wherein the sensing means detects a voltage on individual batteries in the battery pack.

Claim 12 (new): The protection circuit according to claim 9, wherein the sensing means detects a voltage on individual batteries in the battery pack.

Claim 13 (new): The protection circuit according to claim 6, wherein the sensing means includes a FET, wherein a source terminal of the FET is connected between two batteries in the battery pack.

Claim 14 (new): The protection circuit according to claim 9, wherein the sensing means includes a FET, wherein a source terminal of the FET is connected between two batteries in the battery pack.